Building Modern Online Social Presence:

A Review of Theories and its Implication for Future Trends

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Introduction

The past half a century has witnessed the exponential development of Internet (Madden, 2006) and Internet is growing fast both in the volume of content as well as in the number of users minute by minute (King, Walpole, & Lamon, 2007). Thus, it is of significant importance to study the Internet because of its interactivity, visual representation, and elasticness (Newhagen & Rafaeli, 1996).

Online learning has been promoted as being more cost effective and convenient than traditional education environments, as well as providing opportunities for more learners to continue their education in various settings (Oliver, 1999). A large number of online or web-based courses are offered to accommodate the diverse needs of students (Haugen, LaBarre & Melrose, 2001; McEwan, 2001). In 2000, around 900 accredited institutions in the U.S. offered 1,000 degrees and certificate programs online (Kenny, 2000), and by 2003, nearly two million U.S. college students took an online class (Carlson, 2004). More online educational opportunities will be available in both educational and corporate settings (Meyen, Aust, Gauch, Hinton, & Isaacson, 2002).

With the growing popularity of online education, more research has been conducted to focus on how students feel online, and social presence is an essential place to start the investigation, especially considering its asynchronous nature (Garrison & Arbaugh, 2007). The lack of physical presence and the inadequate communication between instructors and learners in online learning could lead to students' frustration, dissatisfaction, less participation
or even higher dropout rates in online courses (Reio & Crim, 2006). As an essential factor in online environments, social presence needs to be studied in relation with the effectiveness of online instruction (Tu, 2001).

**How to Define and Measure Online Social Presence?**

The discussion and study of social presence originated in the 1970s and it has witnessed the development of technology in education from telecommunications to Computer-Mediated Communications (CMC), Web 2.0 and virtual worlds. Throughout the evaluation of social presence, there is few widely accepted definitions or measurements of social presence (Stein & Wanstreet, 2003) and people often define and conceptualize it differently (Lowenthal, 2009). To identify the important historical developments and trends in the field, it is of great significance to study a variety of influential research in the field as well as their evolution in order to fully understand social presence and their effectiveness in online learning.

Based on the social psychological theories of interpersonal communication, Short, Williams and Christie (1976) first introduced the term social presence in study of quality of the communications medium and defined it as "the degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationships" (p. 65). They postulated that social presence is a quality of the medium and communications media vary in the degree of social presence basing on their transmission ability of nonverbal and vocal information (Gunawardena, Charlotte & Zittle, 1997; Swan & Shih, 2005). Intimacy and immediacy are two important psychological concepts greatly related to social presence (Short, Williams, & Christie, 1976). Immediacy is the perception of "those communication behaviors
that enhance closeness to the nonverbal interaction with another" (Mehrabian, 1969, p. 203) and intimacy could be affected by factors such as eye contact, smiling and topics of conversation, etc. (Argyle & Dean, 1965).

Hypothesizing social presence as an attribute of the medium itself, Short, Williams and Christie (1976) developed a self-report measurement to study the subjective quality of the communications medium. They used a series of semantically differential questions to assess the effects of medium, particularly the intimacy aspect of it. The questionnaire was developed in the format of seven-point, bipolar scales such as sociable/unsociable, personal/impersonal, sensitive/insensitive, and warm/cold.

Short, Williams and Christie's (1976) hypothesis of social presence as an attribute of the medium was challenged by many researchers later and they found that the degree of social presence also varies among different users (Gunawardena, 1995; Gunawardena & Zittle, 1997; Perse et al., 1992; Walther, 1994; Byam, 1995; Johansen, Vallee, & Spangler, 1988; Lombard & Ditton, 1997). Two of the leading researchers among these discussions are Gunawardena and Zittle.

Gunawardena and Zittle (1997) defined social presence as "the degree to which a person is perceived as 'real' in mediated communication" and "a construct that comprises a number of dimensions relating to the degree of interpersonal contact" (p. 9). Based on Short, Williams, and Christie's study (1976), they conducted research to measure students' perceptions of social presence of others in a GlobalEd computer conference, especially the immediacy aspect of the social presence. Both five-point Likert-scale and bi-polar items such as personal/impersonal, immediate/nonimmediate, interactive/non-interactive,
sensitive/insensitive, social/unsociable, and colorful/colorless were used to measure variables in areas such as social presence, participation in the conference and attitudes toward CMC, etc. (Gunawardena & Zittle, 1997).

Almost at the same time, Biocca (1997) proposed that social presence is "the degree to which a user feels access to the intelligence, intentions, and sensory impressions of another" (p. 22) and the minimum level of social presence a person can feel is expressed through the form, behavior, or sensory experience of another intelligence (Biocca, 1997). Biocca, Harms and Burgoon (2003) reviewed, classified, and critiqued existing theories and measures of social presence. They also proposed a set of criteria and scope conditions to help remedy limitations in the past theories and measurement (Biocca, Harms, & Burgoon, 2003)

Following the previous research, Swan, Richardson and Shih have conducted a series of studies to investigate the nature of social presence (Swan, 2003; Richardson & Swan, 2003; Swan & Shih, 2005). Swan and Shih (2005) defined social presence as "the degree to which participants in computer-mediated communication feel affectively connected one to another" (p. 115). To find out students' perceptions of social presence in online courses and the relationship between social presence and students' perceived learning and satisfaction, Richardson and Swan (2003) used a modified version of Gunawardena and Zittle's (1997) survey, in which they included a six point response scale to assess students' overall perceptions of their online course as well as the existence of various standard course activities in the online setting. In another study, Swan (2003) also examined the ways in which social presence was developed in an online graduate course by using the categories and indicators of social presence which were proposed by Rourke and his colleagues (Rourke, Anderson,

Rourke, Anderson, Garrison and Archer (1999) defined social presence as "the ability of learners to project themselves socially and emotionally in a community of inquiry" (p. 1). This definition was greatly supported by a theoretical framework—the community of inquiry, which was developed by Garrison, Anderson, and Archer (2000). According to this framework, learning occurs within the community through the interaction of three essential elements: cognitive presence, social presence, and teaching presence (Garrison, Anderson, & Archer, 2000). Rourke, Anderson, Garrison and Archer (1999) developed their model and template for assessing social presence, in which they suggested that social presence in CMC can be reflected by affective, interactive and cohesive responses, and each category can be tested through different indicators such as expressions of emotions, continuing a thread, the use of vocatives, etc. Another template was also developed by Garrison, Anderson, and Archer (2000) and they suggested emotional expression, open communication, and instructional management as the indicators of cognitive, social and teaching presence.

As one of the most active researchers in the field recently, Tu (2000) proposed social context, online communication and interactivity as the three dimensions of social presence in the online learning environment based on the Durlak’s (1987) study. Social presence in the online environment was also defined as "the degree of feeling, perception, and reaction to another intellectual entity in the CMC environment" (Tu & McIsaac, 2002, p. 146). Tu (2002) argued that social presence is a complicated construct which involves various items such as privacy, social relationships, communication styles, the nature of the task, feedback, and immediacy which many social presence instruments (Short, Williams, & Christie 1976;
Gunawardena & Zittle, 1997) failed to consider. Hence, Tu (2002) developed and validated the Social Presence and Privacy Questionnaire (SPPQ), which considers several underlying dimensions of social presence. A 42-item questionnaire was designed to identify the social context, online communication and interactivity as different dimensions of online social presence (Tu, 2002).

Picciano (2002) also added that social presence in the online setting is "a student's sense of being and belonging in a course" (p. 22). To investigate the interaction, presence, and performance in an online course, Picciano (2002) designed his satisfaction survey based on the Inventory of Presence Questionnaire developed by the Presence Research Working Group (http://www.presence-research.org) and Tu’s research (2002). Besides the survey, students' performances were also measured from their scores on an exam and scores on a written assignment (Picciano, 2002).

Focusing on virtual environment, Nowak (2000), Choi, Miracle and Biocca (2001), and Nowak and Biocca (2003) studied and measured social presence in the virtual environment. Based on the previous findings, they used a questionnaire with different Likert-type items and the measure of perceived similarity, labeled homophily to find out user's perception of avatars and agents in the virtual world (Nowak, 2000; Choi, Miracle, & Biocca, 2001).

**Trends for Social Presence Research**

Along with the evolution of social presence theories, studies have also been conducted to investigate the effectiveness of social presence and researchers have found that degree of social presence impacts students' learning, interpersonal relationship and
satisfaction (Tu, 2001). For example, social presence was found to have a strong relationship with students' learning outcomes (Arbaugh, 2005; Hwang & Arbaugh, 2006; Williams, Duray, & Reddy, 2006; Yoo, Kanawattanachai, & Citurs, 2002); social presence could also enhance learner's satisfaction (Benbunan-Fich & Hiltz, 2003; Arbaugh & Benbunan-Fich, 2006); collaborative learning activities could also enhance social presence and students' sense of community (Richardson & Swan, 2003; Rovai, 2002), etc.

The extensive studies of social presence have greatly helped build and develop the social presence theory and enhanced people's understanding of social presence in the online environment. With the evolution of the theory as well as with the development of online technology, considerations of online social presence need to be extended to social and cultural, Web 2.0 and instructional design facets.

**Social and Cultural Considerations**

According to Vygotsky's social-cultural theory (Vygotsky, 1986), culture is the prime determinant of individual development and some researchers (Neuman & Bekerman 2000; Spizzica, 1997) even proposed that students' learning styles are predetermined by their culture. Teaching styles also vary between different cultures. For example, a didactic and teacher centered style is usually executed by Chinese teachers (Kirkbride & Tang, 1991) while the style of group discussion and critical analysis is usually conducted in the western classroom (Arkoudis, 2006).

In the online learning environment, there is usually a lack of the regular social cues (Berge & Collins, 1995), and teachers and students have to build and enhance their social presence through using emoticons, telling stories, and even using humor (Rourke et al., 2001;
Swan, 2003). This requires a special consideration of learners' cultural background and cultural perceptions in order to best develop student's online social presence to improve their satisfaction and course effectiveness. However, a huge number of online learning courses are built without putting into serious consideration of the learners’ social environment (Aragon, 2003). Thus, it is of significant importance to find out cultural differences in students' online social presence.

**Web 2.0 Considerations**

According to O'Reilly (2007), Web 2.0 is "the network as platform, spanning all connected devices" (p. 17), and its applications are usually delivered through a continually-updated service, and they consume and remix data from multiple sources (O'Reilly, 2007). Though Millard (2010) argued that Web 2.0 essentially encompasses CMC, it especially carries the original intention of computer networks from data transmission to social interaction.

Web 2.0 usually encourages more informal, free-flowing and just-in-time interactions (Dunlap & Lowenthal, 2009), so the social presence expressed in the Web 2.0 environment may not be the same as the traditional social presence studied in the CMC setting. With Web 2.0 applications such as Blog, Flickr, Wikis, Facebook, Twitter, etc., students are expected to feel more social presence in the Web 2.0 environment because they can communicate with each other in a more intimate and flexible way within their social networking. Thus, more studies should be conducted to investigate social presence's existence, measurement, effectiveness in the Web 2.0 learning environment.

**Instructional Design Consideration**
A large number of recent research studies have indicated that social presence is one of the most significant factors in improving learners' satisfaction, enhancing instructional effectiveness and building a sense of community (Benbunan-Fich & Hiltz, 2003; Arbaugh, 2005; Richardson & Swan, 2003). But few studies have focused on synthesizing all the research findings and came up with systematic instructional design strategies that help design an online course with the most appropriate amount of social presence.

Aragon (2003) started a great discussion of strategies for creating social presence in online environments, and he offered strategies for three groups of individuals in the online settings: course designers (course design), instructors (delivery and management), and participants (participation). Considering the evolution of social presence, there is still a lack of a systematic approach addressing all the variables in the social presence theory such as ways of facilitating of affective, interactive and cohesive responses in social presence through the community of inquiry (Rourke, Anderson, Garrison, & Archer, 1999; Garrison, Anderson, & Archer, 2000), or ways of developing the three dimension of social presence (social context, online communication and interactivity) (Tu, 2000), etc.

Due to the isolated nature of online learning, it is of great significance to consider strategies for developing social presence in the online environment. But currently, the systematic models and principles of designing online social presence are far lagging behind the research of social presence measurement and its effectiveness. A systematic consideration of instructional design strategies for developing online social presence is particularly required in accordance with the rapid development of online education. A multifaceted and longitudinal assessment of the effectiveness of these strategies is also immediately needed.
following the development of the strategies of developing online social presence.

Conclusion

Just as the debate on the definition of our field of Instructional Design and Technology or Education Technology never stops (Lowenthal & Wilson, 2010), the social presence concept also moves along with the development of research and technology. Besides the three trends discussed above, social presence could be explored from many directions such as the relationship between three presences within the Community of Inquiry (Garrison & Arbaugh, 2007). As a dynamic variable (Tu, 2000), online social presence is greatly encouraged to be studied from various dimensions along with the development of online technologies.
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